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The Invention claimed is:

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CLAIMS

1. A method of maximising the fault coverage on an integrated digital circuit by re-ordering a number of test vectors for testing the digital circuit, said method comprising :

- 5 a) providing an initial set of test vectors T_0 ;
 - b) providing an original set of faults F_0 ;
 - c) selecting faults at random from the original fault list to form a sample fault list F_N ;
 - 10 d) forming a vector set T_{N-1} and simulating the vector set T_{N-1} against fault list F_N ;
 - e) discarding any vector from the vector set T_{N-1} which does not detect any faults, and
 - f) saving the remaining vectors as vector set T_N , repeating the above steps a) to e) N times with N having
 - 15 a value of 1 to M so that the end of N steps saving test vectors T_0 to T_M ;
 - g) removing duplicate vector patterns in each vector set T_N , and
 - h) initialising the final vector set and appending
 - 20 vector sets V_M to V_0 to produce a final vector set T_F .
2. A method as claimed in claim 1 wherein in steps a) to f) M is 10 and these steps are therefore repeated ten times.
3. A method as claimed in claim 1 wherein the list of
- 25 faults selected from the original list of faults have a probability of X^N to produce subset fault list F_N .
4. A method as claimed in claim 2 wherein the list of

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faults selected from the original list of faults have a probability of X^N to produce subset fault list F_N .

5. A method as claimed in claim 3 wherein $X=2$.

6. A method as claimed in claim 1 wherein the step of removing duplicate vector patterns is achieved by :

5 i) copying the original fault list F_0 to provide a secondary fault list G_0 ;

j) fault simulating vector set T_N against G_N and deleting any vectors which find no faults;

10 k) saving the resulting vectors as vector set V_N and saving the list of undetected faults as list G_{N-1} ;

l) repeating step g) to i) $M+1$ times with N having values M to 0;

7. A method as claimed in claim 1 wherein the step of removing duplicate vector patterns is achieved by
15 conducting a text search through the list of files of vector patterns looking for identical patterns,
identifying the identical patterns and deleting the identical patterns identified.

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